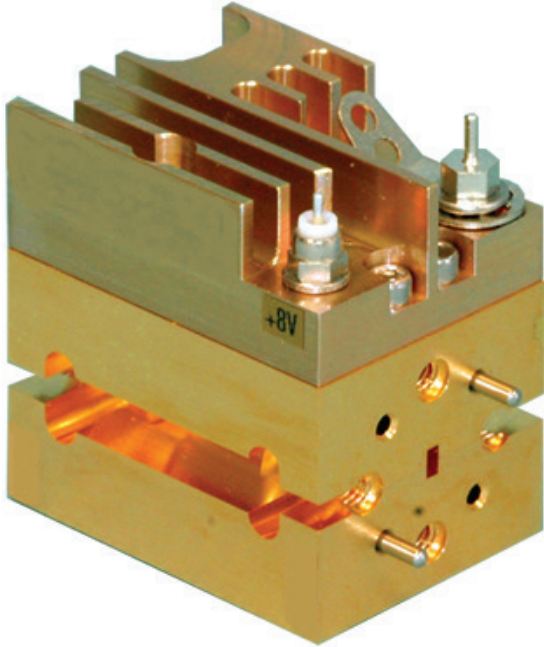


# LNA Series

Low Noise Amplifiers



Smiths Interconnect's LNA Series of low noise amplifiers utilizes advanced PHEMT MMICs and transistors for state-of-the-art noise performance in the 18 to 120 GHz frequency range.

Each amplifier has internal bias circuitry that generates gate control voltages, provides proper voltage sequencing and bias. The standard amplifier interfaces include coaxial connectors of 2.92 mm (0 to 40 GHz), 2.4 mm (0 to 50 GHz), and 1.85 mm (0 to 65 GHz), as well as waveguide interfaces ranging from WR-42 to WR-10.

Standard products offer sufficient gain for most applications but multiple MMIC amplifier chips can be combined or cascaded for applications that require higher gain or greater output power.

The LNA Series' broad bandwidth and low noise makes it a perfect choice for a wide range of applications including radiometry, polarimetry, EW systems, instrumentation and radar systems. For applications requiring driver or power amplifications, please refer to Smiths Interconnect's AMP Series of power amplifiers.

LNA Series,  
wideband coverage with  
state-of-the art noise  
figure performance.

## Features and Benefits

- Wideband Coverage
- Modular Compact Design
- 2.92, 2.4, 1.85 mm or Waveguide Interfaces as Required
- Internal Voltage Regulation and Bias Circuitry
- State-of-the-Art Noise Figure Performance

## Applications

- Military or Commercial Units Available
- Sensitive Receivers
- Spectrum Analyzer Preamplifiers
- Wideband Radiometry
- Radar Front-ends
- Communication Subsystems
- Remote Sensing

# Technical Characteristics

## Specifications

Model Number	Flow (GHz)	FHigh (GHz)	Gain (typ.) (dB)	NF (typ.) (dB)	Connector	Current (A) (typ.)	Input Voltage (V) (mini-max)	Max RF Input Power (dBm)	Outline Drawing
LNA-42-03330	18	26.5	29	2.5 @ 18GHz 2 @ 22GHz 1.5 @ 26.5GHz	WR-42	0.08	7.5 - 15	-15	Fig. 2
LNA-KK-03050	26	34	21	3.8	2.92/2.4 mm	0.08	7.5 - 15	TBA	Fig. 1
LNA-28-03050	26.5	34	24	3	WR-28	0.08	7.5 - 15	TBA	Fig. 3
LNA-KK-03330	18	40	27	3 @ 18 GHz 2 @ 28 GHz 2 @ 40 GHz	2.92/2.4 mm	0.08	7.5 - 15	-15	Fig. 1
LNA-28-03330	26.5	40	28	1.5	WR-28	0.08	7.5 - 15	-15	Fig. 3
LNA-KK-03070 <sup>1</sup>	30	40	17	5	2.92/2.4 mm	0.065	7.5 - 15	12	Fig. 1
LNA-28-03070	30	40	19	4	WR-28	0.065	7.5 - 15	12	Fig. 3
LNA-KK-02060 <sup>1</sup>	32	40	18.0 @ 33 GHz 15.5 @ 36 GHz 17.5 @ 40 GHz 17.8 @ 43 GHz 14.5 @ 46 GHz	5.0 @ 33 GHz 4.5 @ 36 GHz 4.0 @ 40 GHz 4.5 @ 43 GHz 5.3 @ 46 GHz	2.92/2.4 mm	0.055	7.5 - 15	15	Fig. 1
LNA-28-02060	32	40	18.5 @ 33 GHz 16.0 @ 36 GHz 18.0 @ 40 GHz 18.3 @ 43 GHz 15.0 @ 46 GHz	4.5 @ 33 GHz 4.0 @ 36 GHz 3.5 @ 40 GHz 4.0 @ 43 GHz 4.8 @ 46 GHz	WR-28	0.055	7.5 - 15	15	Fig. 3
LNA-22-03070	33	42	20	4	WR-22	0.065	7.5 - 15	12	Fig. 4
LNA-22-02060	33	46	18.5 @ 33 GHz 16.0 @ 36 GHz 18.0 @ 40 GHz 18.3 @ 43 GHz 15.0 @ 46 GHz	4.5 @ 33 GHz 4.0 @ 36 GHz 3.5 @ 40 GHz 4.0 @ 43 GHz 4.8 @ 46 GHz	WR-22	0.055	7.5 - 15	15	Fig. 4
LNA-22-22060	33	46	31	.5 @ 33 GHz 4.0 @ 36 GHz 3.5 @ 40 GHz 4.0 @ 43 GHz 4.8 @ 46 GHz	WR-22	0.1	7.5 - 15	-5	*
LNA-19-03320	40	60	22	2.5	WR-19	0.075	7.5 - 15	0	*
LNA-15-02240	55	65	20	5	WR-15	0.06	7.5 - 15	0	Fig. 5
LNA-15-03320	50	75	2 (50 - 70GHz) 17 @ 75 GHz	2.5	WR-15	0.075	7.5 - 15	0	Fig. 5
LNA-12-02280	71	86	21 19 @ 86 GHz	4.5	WR-12	0.075	7.5 - 15	0	Fig. 6
LNA-12-02690	71	86	20	4.5	WR-12	0.18	7.5 - 15	3	*
LNA-10-02280	75	86	19	4.5	WR-10	0.075	7.5 - 15	0	Fig. 7
LNA-10-03350	75	100	22	3	WR-10	0.08	7.5 - 15	0	Fig. 7
LNA-10-02580	80	105	16	6	WR-10	0.15	7.5 - 15	0	Fig. 7
LNA-10-03290	80	105	15	6	WR-10	0.3	7.5 - 15	3	*
LNA-10-02590	75	110	21 @ 75 GHz 22 @ 95 GHz 10 @ 110GHz	2.8 @ 75 GHz 3.0 @ 95 GHz 6.5 @ 110 GHz	WR-10	0.05	7.5 - 15	TBA	Fig. 7

\* Please contact our Northampton, MA office for details.

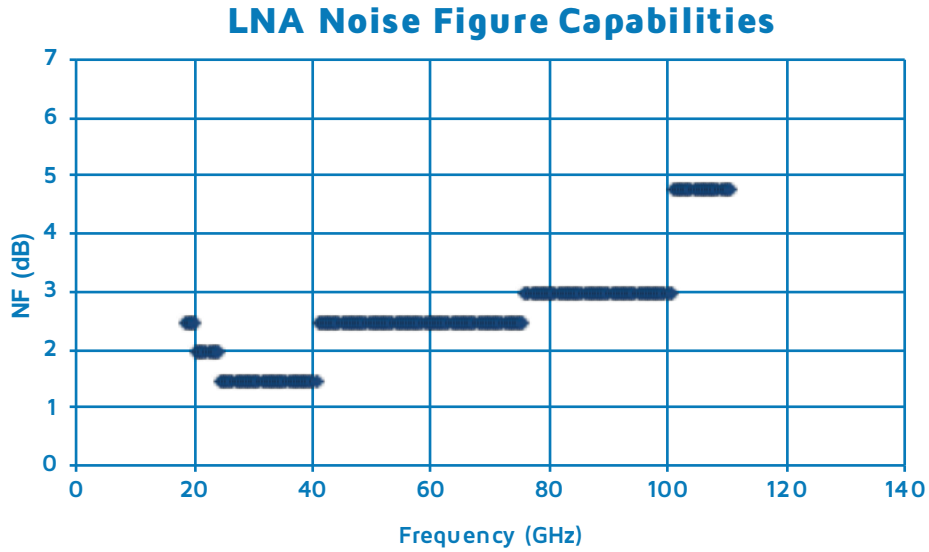
1 For 2.4 mm, substitute "QQ" for "KK" in the model number.

2 Descends with frequency.

3 Balanced amplifier. Return loss is -20dB. **Note:** Some model numbers are ITAR controlled.

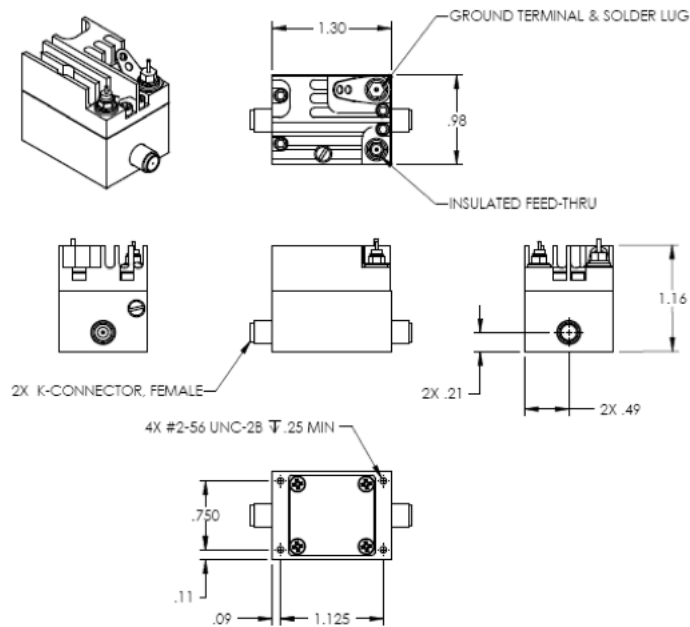
# Technical Characteristics

## Specifications



# Outline Drawings

Figure 1



# Outline Drawings

Figure 2

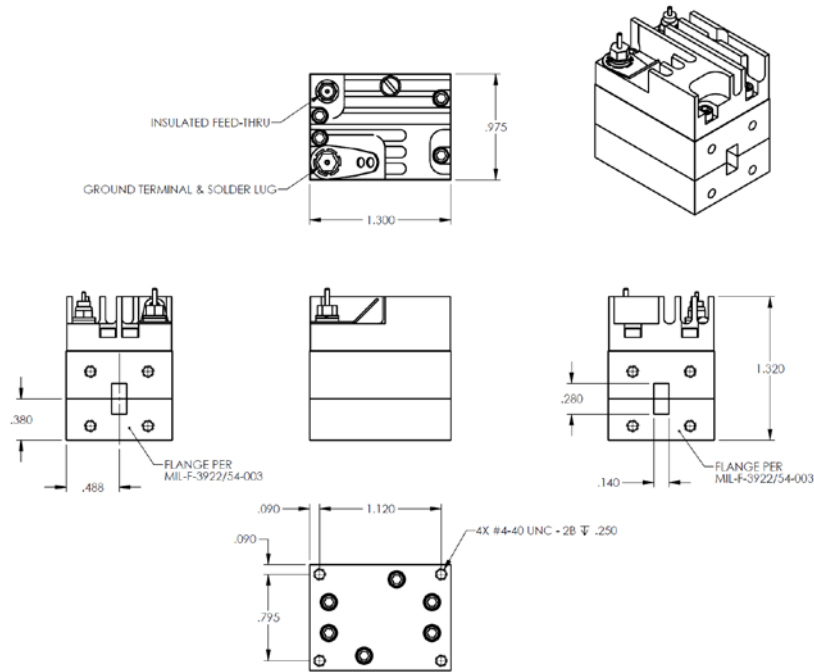
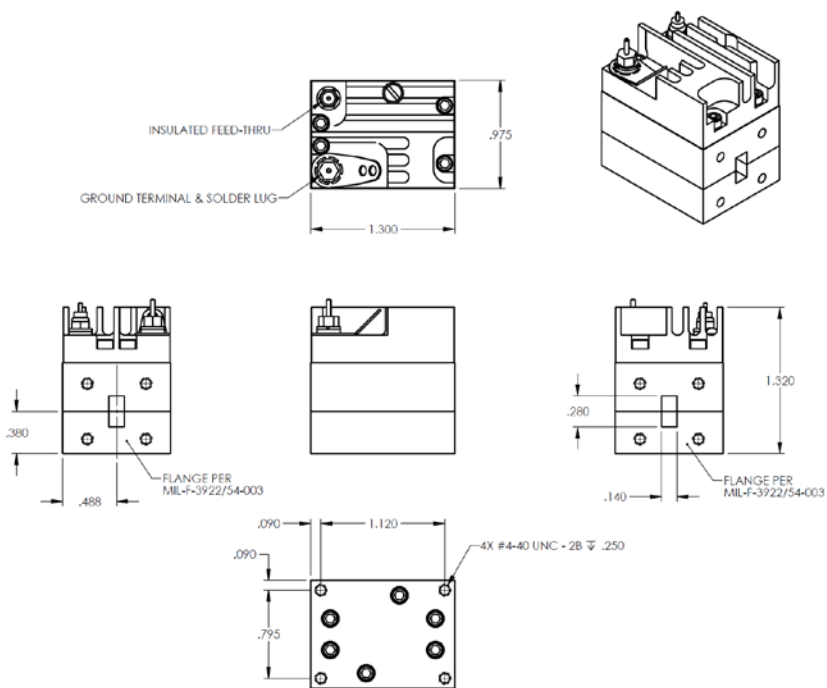


Figure 3



# Outline Drawings

Figure 4

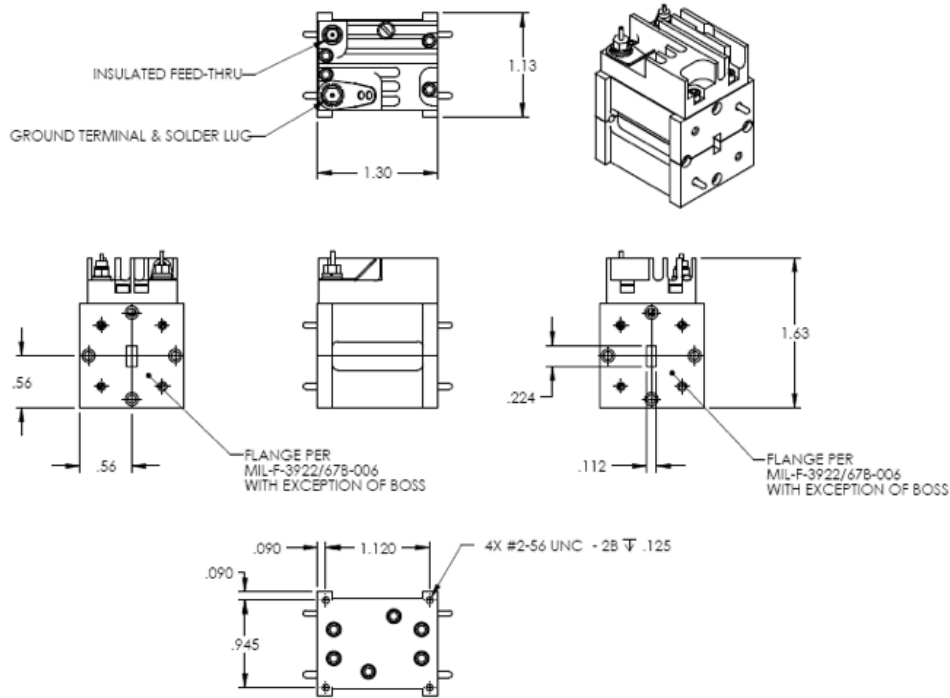
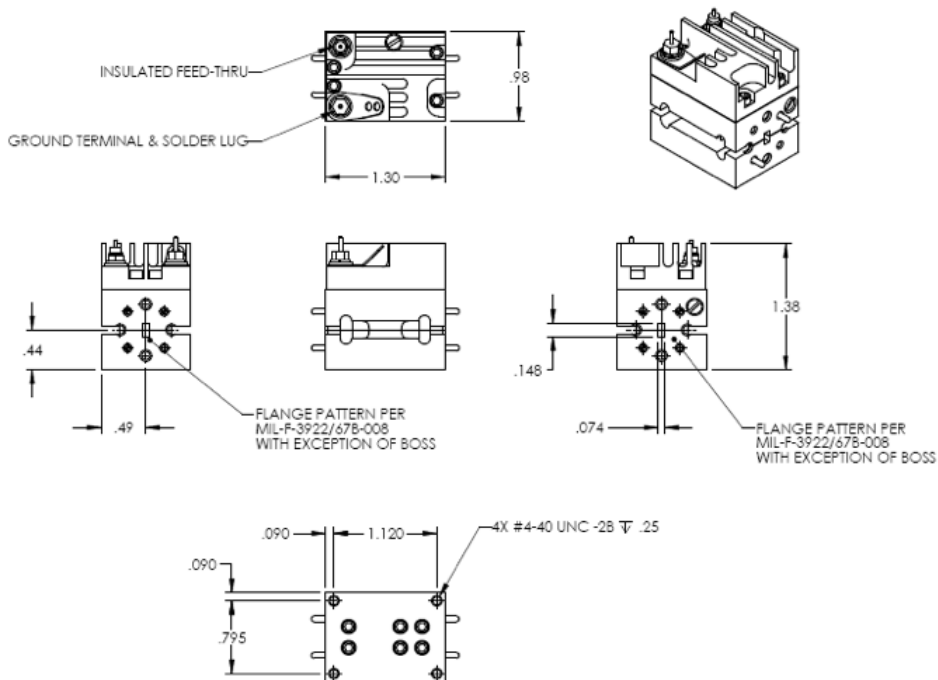


Figure 5



# Outline Drawings

Figure 6

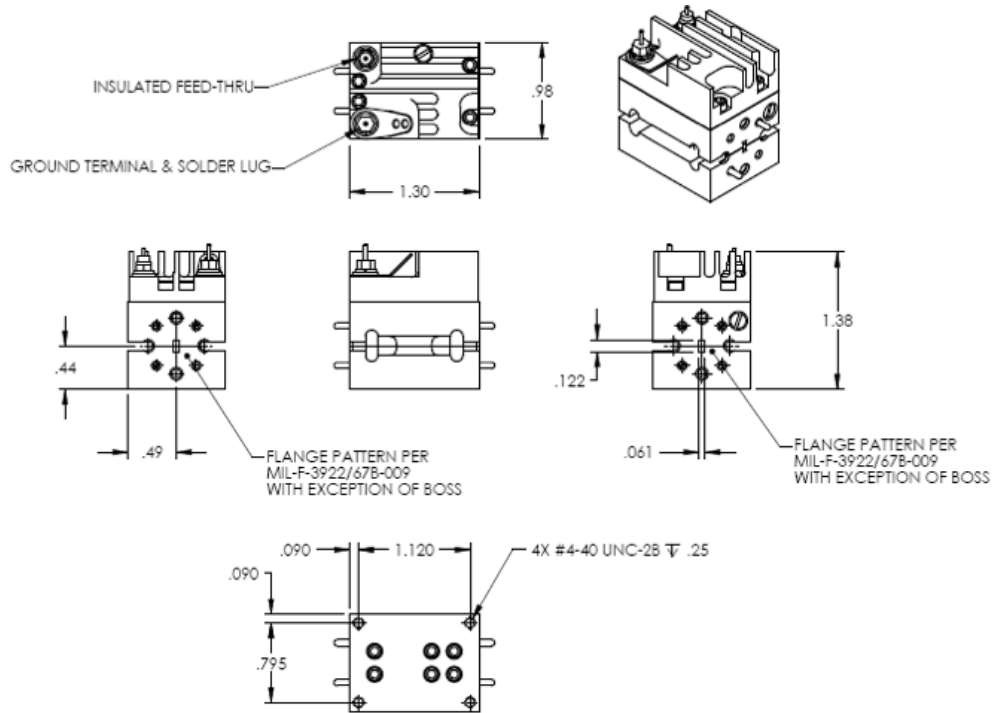
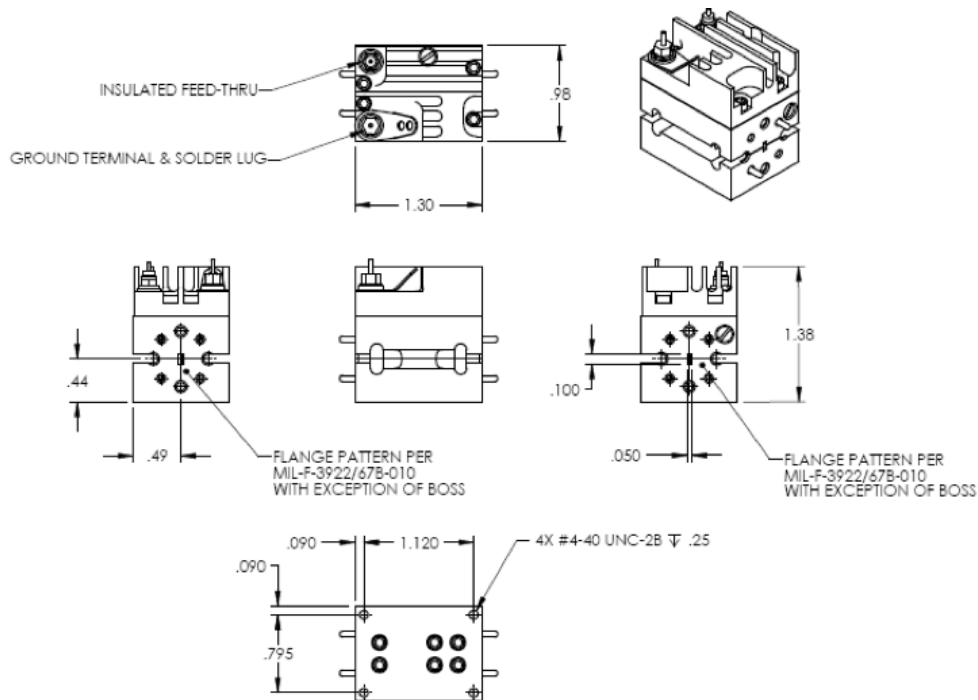
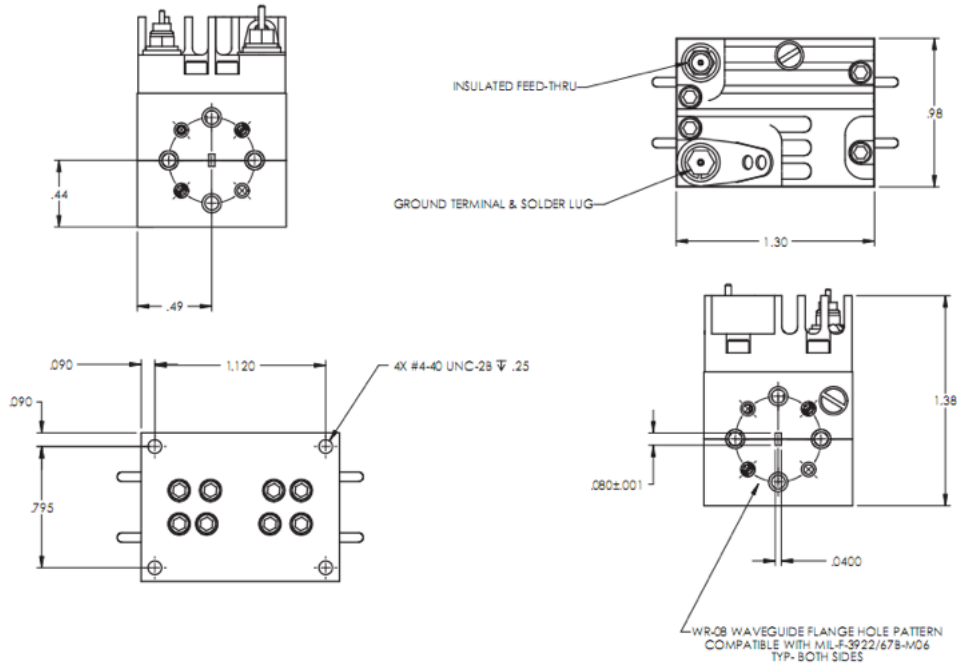


Figure 7



# Outline Drawings

Figure 8



All dimensions are in inches and [mm]

## How To Order

Specify Model Number: **LNA-XX-AAAA**



<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid gray; padding: 2px;">L</div> <div style="border: 1px solid gray; padding: 2px;">N</div> <div style="border: 1px solid gray; padding: 2px;">A</div> </div> <p><b>LNA</b></p>	-	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid gray; padding: 2px;">X</div> <div style="border: 1px solid gray; padding: 2px;">X</div> </div> <p><b>XX</b></p>	-	<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid gray; padding: 2px;">A</div> <div style="border: 1px solid gray; padding: 2px;">A</div> <div style="border: 1px solid gray; padding: 2px;">A</div> <div style="border: 1px solid gray; padding: 2px;">A</div> </div> <p><b>AAAA</b></p>
<b>LNA</b> Series Name	<div style="display: flex; align-items: center;"> <div style="border: 1px solid gray; padding: 2px;">L</div> <div style="border: 1px solid gray; padding: 2px;">N</div> <div style="border: 1px solid gray; padding: 2px;">A</div> <span> Series</span> </div>			
<b>XX</b> Standard Connector	<div style="display: flex; flex-wrap: wrap; justify-content: space-between;"> <div style="margin: 5px;"> <div style="border: 1px solid gray; padding: 2px;">K</div> <div style="border: 1px solid gray; padding: 2px;">K</div> <span> 2.92 mm</span> </div> <div style="margin: 5px;"> <div style="border: 1px solid gray; padding: 2px;">Q</div> <div style="border: 1px solid gray; padding: 2px;">Q</div> <span> 2.4 mm</span> </div> <div style="margin: 5px;"> <div style="border: 1px solid gray; padding: 2px;">4</div> <div style="border: 1px solid gray; padding: 2px;">2</div> <span> WR-42</span> </div> <div style="margin: 5px;"> <div style="border: 1px solid gray; padding: 2px;">2</div> <div style="border: 1px solid gray; padding: 2px;">8</div> <span> WR-28</span> </div> <div style="margin: 5px;"> <div style="border: 1px solid gray; padding: 2px;">2</div> <div style="border: 1px solid gray; padding: 2px;">2</div> <span> WR-22</span> </div> <div style="margin: 5px;"> <div style="border: 1px solid gray; padding: 2px;">1</div> <div style="border: 1px solid gray; padding: 2px;">5</div> <span> WR-15</span> </div> <div style="margin: 5px;"> <div style="border: 1px solid gray; padding: 2px;">1</div> <div style="border: 1px solid gray; padding: 2px;">2</div> <span> WR-12</span> </div> <div style="margin: 5px;"> <div style="border: 1px solid gray; padding: 2px;">1</div> <div style="border: 1px solid gray; padding: 2px;">0</div> <span> WR-10</span> </div> <div style="margin: 5px;"> <div style="border: 1px solid gray; padding: 2px;">0</div> <div style="border: 1px solid gray; padding: 2px;">8</div> <span> WR-08</span> </div> </div>			
<b>AAAA</b> Standard Model Number	<div style="display: flex; align-items: center;"> <div style="border: 1px solid gray; padding: 2px; margin-right: 5px;"> </div> <div style="border: 1px solid gray; padding: 2px; margin-right: 5px;"> </div> <div style="border: 1px solid gray; padding: 2px; margin-right: 5px;"> </div> <div style="border: 1px solid gray; padding: 2px; margin-right: 5px;"> </div> <div style="border: 1px solid gray; padding: 2px; margin-right: 5px;"> </div> <div style="margin-left: 10px;">             Choose a standard model number from our product list. If none of these products meet your requirements, please contact our Northampton, MA office for custom design options.           </div> </div>			

Please specify frequency range for all narrowband units.

# Global Support

## UK Headquarters

- London, UK  
+44 20 7004 1600  
info.uk@smithsinterconnect.com

## US Headquarters

- Stuart, FL  
+1 772 286 9300  
info.us@smithsinterconnect.com

## Americas

- Costa Mesa, CA  
+1 714 371 1100  
info.us@smithsinterconnect.com
- Milpitas, CA  
+1 408 957 9607 x-1125  
info.us@smithsinterconnect.com
- Stuart, FL  
+1 772 286 9300  
info.us@smithsinterconnect.com
- Hudson, MA  
+1 978 568 0451  
info.us@smithsinterconnect.com
- Northampton, MA  
+1 413 582 9620  
info.northampton@smithsinterconnectinc.com
- Tampa, FL  
+ 1 813 901 7200  
info.tampa@smithsinterconnectinc.com
- Kansas City, KS  
+1 913 342 5544  
info.us@smithsinterconnect.com
- Salisbury, MD  
+1 800 780 2169  
info.us@smithsinterconnect.com
- Thousand Oaks, CA  
+1 805 267 0100  
info.thousandoaks@smithsinterconnectinc.com

## Europe

- Deggendorf, Germany  
+49 991 250 120  
info.de@smithsinterconnect.com
- Genova, Italy  
+39 0 10 60361  
info.it@smithsinterconnect.com
- Dundee, UK  
+44 1382 427 200  
info.dundee@smithsinterconnect.com
- Rouen, France  
+33 2 32 96 91 76  
info.fr@smithsinterconnect.com
- Elstree, UK  
+44 20 8236 2400  
info.uk@smithsinterconnect.com

## Asia

- Shanghai, China  
+86 21 3318 4650  
info.asia@smithsinterconnect.com
- Suzhou, China  
+86 512 6273 1188  
info.asia@smithsinterconnect.com
- Singapore  
+65 6846 1655  
info.asia@smithsinterconnect.com

more > [smithsinterconnect.com](http://smithsinterconnect.com) | [in](#) [twitter](#) [G+](#) [YouTube](#)